

Appl. No. 10/619,852
Reply Dated 15 October 2004
Reply to Office action of 28 June 2004

Applicant respectfully offers that all the elements of prior art are not found in Claim 1.

The Examiner posited as the basis for rejection:

Giguere discloses a process of degermination corn including tempering said corn, pre-breaking same (wherein it is considered that a polishing action would take place, particular since it is required that the germ in said treatment still remain whole), tempering same, and then treating same through a set of rollers which are would inherently cause a step of friction due to the separation between same (avoidance of size reduction of the germ, col. 11, lines 40-48) and the difference in speed between the rollers (col. 12, lines 4-9)

Office Action, page 2. Claim 1 of the instant application to which the objection was made provides:

A process for de-germinating corn kernels comprising, in the sequence indicated:
a first tempering step;
a polishing step;
a second tempering step; and
a friction step.

Claim 1 is not anticipated as Giguere's '313 patent does not teach a polishing step and as Claim 1 does not contain the whole-kernel pulverizing step of Giguere's '313 patent.

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- I. Claim 1 is not anticipated as the polishing step is not found Giguere's '313 patent, which instead contains a whole-kernel pulverizing step.**

Claim 1 is not anticipated as the polishing step is not found Giguere's '313 patent, which instead contains a whole-kernel pulverizing step.

- A. Giguere's '313 patent teaches pre-breaking of the kernel containing bran, endosperm and germ.**

Giguere's '313 patent teaches pre-breaking of the kernel, containing bran, endosperm and germ, by impact crushing and intended destruction of the whole kernel:

The prebreak mill may be any suitable type that breaks the grain by subjecting it to a crushing action that breaks the endosperm while preferably although not necessarily maintaining a substantial amount of the germ in a whole condition....The crushing action should fracture the grain into at least four and preferably six or more major pieces.

Giguere's '313 patent, Col. 10, Lines 38-41, 43-45.

- B. Claim 1 is not anticipated as the polishing step is not found Giguere's '313 patent.**

Claim 1 is not anticipated as the polishing step is not found Giguere's '313 patent. The polishing step of Claim 1 of the instant application, which the Examiner has analogized to the pre-breaking step, is not found in Giguere's '313 patent. The polishing step of Claim 1 of the instant application is explained by the specification as:

The corn kernels are next introduced into a polishing machine 400, which consists of a rotating eccentric rotor 410 surrounded by a polygonal perforated metal screen 412. As the clearance between the screen 412 and the rotor 410 changes during each rotation, the corn kernels experience alternating cycles of compression and relaxation, producing an effective rubbing action. The polishing machine 400 ruptures the softened bran 102, which softened bran 102 leaves the milling chamber through the perforations in the screen 412.

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Application, Page 7, Lines 18-24. Instead of producing a polishing action, Giguere's pre-breaking step breaking the grain or kernel into at least four pieces without removing the bran from the exterior of the kernel. Giguere's '313 patent, Col. 10, Lines 38-41, 43-45.

II Claim 1 is not anticipated as Giguere's '313 patent does not contain a friction step.

Claim 1 is not anticipated as the friction step is not found Giguere's '313 patent. Giguere instead teaches a second pulverization step. Giguere's '313 patent teaches use of corrugated rollers to "grind up" the germ, bran and endosperm. Claim 1 of the instant invention teaches the use of friction to separate the endosperm from germ in the largest pieces possible, the bran already having been removed.

A. Giguere's '313 patent does not contain a friction step, it contains a second pulverizing step.

Giguere's '313 patent teaches use of a break mill having rollers with mesh corrugations to pulverize the bran, endosperm and germ:

The present invention departs from the technique of the conventional grain milling process which, as previously indicated, attempts to match particle size with individual roller mill characteristics. In the conventional gradual reduction process, the particles are first passed through roller mills having relatively large corrugations and then to successive additional roller mills having increasingly finer corrugations. It has heretofore been thought that any attempt to utilize rollers having fine corrugations at the front end of the mill would result in smashing of the grain kernels which would make ultimate separation of germ, bran and endosperm exceedingly difficult.

Instead of passing the grain through a long succession of rollers as is done in the conventional process, grinding is accomplished in the present invention by passing the broken grain directly to fine rollers of the type that normally characterize only the end of a differential milling process.

Giguere's '313 patent, Col. 11, Lines 15-33. Giguere's '313 patent teaches Using mesh corrugations on the rollers to crush and grind the endosperm, bran and germ together:

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Due to the fineness of the roller corrugations and their spacing, the endosperm is severely and abruptly ground up and thereby separated from the germ and bran without resulting in the germ being fractured excessively.

Giguere's '313 patent, Col. 11, Lines 53-57.

B. Claim 1 of the instant application contains a friction step.

Claim 1 of the instant application contains a friction step not found in Giguere's '313 patent. In Claim 1's friction step the kernel is compressed to squeeze the germ from the endosperm while minimizing endosperm particles:

The two rollers 802 and 804 rotate at differing surface speeds in different directions, so the adjacent surfaces move the same direction. Because friction mandates that an object in contact with either roller 802 or 804 will attempt to move at the same linear speed as the surface of the roller, a shear force develops across the kernel 100, from the difference in linear speed applied to the two different sides of the kernel 100. This action causes the germ 104 to break away from the endosperm 106. The material covering the rollers must be sufficiently elastic to engage the corn kernels 100 gently enough to avoid cracking or crushing the kernels 100, yet rigid enough to resist rapid wear of the material. A stiff rubber or relatively dense polyurethane has been determined to have characteristics consistent with such requirement.

At least one of the rollers 802 or 804 is adjustable in relationship to the other so that the friction applied between the roller surfaces may be adjusted to provide sufficient friction to various size corn kernels to tear the germ 104 from the endosperm 106, but to avoid pulverizing the kernel 100.

...

In practice, the application of such friction will result in breaking away the germ 104 from the endosperm 106, and may also result in tearing of the endosperm 106, resulting in endosperm 106 particles. By minimizing the production of particles and by maximizing the size of particles produced, the highest value of the kernel may be realized. Endosperm 106 particles produced as a result of process of the present invention tend to be relatively large as such particles are produced as a result of a shear force rather than an impact force.

Application, Page 9 Lines 7-20; Page 10, Lines 4-10.

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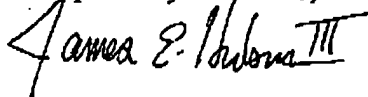
III. Conclusion

Claim 1 of the instant application should be allowed. The polishing step of Claim 1 is not found in Giguere's '313 patent. Additionally, the friction step of Claim 1 is not found in Giguere's '313 patent.

In light of such differences, Claim 1 of the instant application is not anticipated by Giguere's '313 patent. Applicant therefore respectfully requests that a Notice of Allowance be issued in this case.

Counsel for Applicant respectfully requests an interview with the Examiner to discuss the issues raised in the Office Action and this Reply.

Respectfully submitted,



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